

Yuqun Wu

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EDUCATION

University of Illinois at Urbana-Champaign

Master of Science in Computer Science (thesis)

- Advisor: Prof. Derek Hoiem, Prof. Shenlong Wang

Champaign, USA

Aug 2022 - May 2024

Bachelor of Science in Computer Science & Statistics

- Highest Honors at graduation, Dean's list for all years
- GPA: 4.0/4.0

Jan 2020 - Dec 2021

Sun Yat-sen University

Bachelor of Science in Mathematics

Guangzhou, China

Sep 2016 - Dec 2019

RESEARCH EXPERIENCE

University of Illinois at Urbana-Champaign

Champaign, USA

Sparse SPN: Depth Completion from Sparse Keypoints - *In Submission*

Sep 2021 - Present

Advisor: Prof. Derek Hoiem

- Project draws attention to single view depth completion taking point cloud from SfM as input
- Design a novel method that outperforms existing depth completion pipelines given sparse keypoint depth, and reconstructs complete point clouds given real SfM setup

QFF: Quantized Fourier Features for Neural Field Representations - *In Submission*

Aug 2022 - Present

Advisor: Prof. Derek Hoiem, Prof. Shenlong Wang

- Project presents Quantized Fourier Features (QFF), which encodes features in bins of Fourier features, and can result in smaller model size, faster training, and better quality outputs for various applications of neural representation
- Assist in blending QFF into different network setups and running experiments

Unified indoor 3D representation

Aug 2022 - Present

Advisor: Prof. Derek Hoiem, Prof. Shenlong Wang

- Project targets at building an indoor 3D scene with unified representation using NeRF based method
- Assist in investigating ideas of picking suitable representation, and preparing dataset

GRIT: General Robust Image Task Benchmark

Jun 2021 - Aug 2021

Advisor: Prof. Derek Hoiem

- Rendered surface normal of object-centric and scene-centric datasets, and split them into training, validation, and testing sets
- Trained a baseline network with training sets, and compare it with several other pretrained state-of-the-art normal estimation networks with testing sets

Depth Completion With Sparse Depth Input

Aug 2020 - Aug 2021

Advisor: Prof. Derek Hoiem

- Project aimed at improving the monocular depth completion by optimization based on sparse depth input, normal mapping, and occlusion boundary
- Implemented baseline, investigated differentiable optimization strategies, and ran expensive experiments

University of California San Diego

Remote

Lighting completion from sparse lighting samples

Jun 2022 - Sep 2022

Advisor: Prof. Manmohan Chandraker

- Project aims at recovering per-pixel spatially-varying lighting maps taking single color image and sparse lighting samples
- Investigated 2D lighting completion methods with differentiable rendering and compare to estimation networks

ACTIVITIES

Teaching Assistant

University of Illinois at Urbana-Champaign

Champaign, USA

Aug 2022 - Dec 2022

- Course: *CS 445 Computational Photography*

Summer Research Experience for Undergraduates (REU)

University of Illinois at Urbana-Champaign

Champaign, USA

May 2021 - Aug 2021

- Attended weekly seminars covering research skills, presentation skills

SKILLS

- **Programming Languages:** Python, C/C++, JavaScript, R
- **Other Tools:** Git, Pytorch, Latex